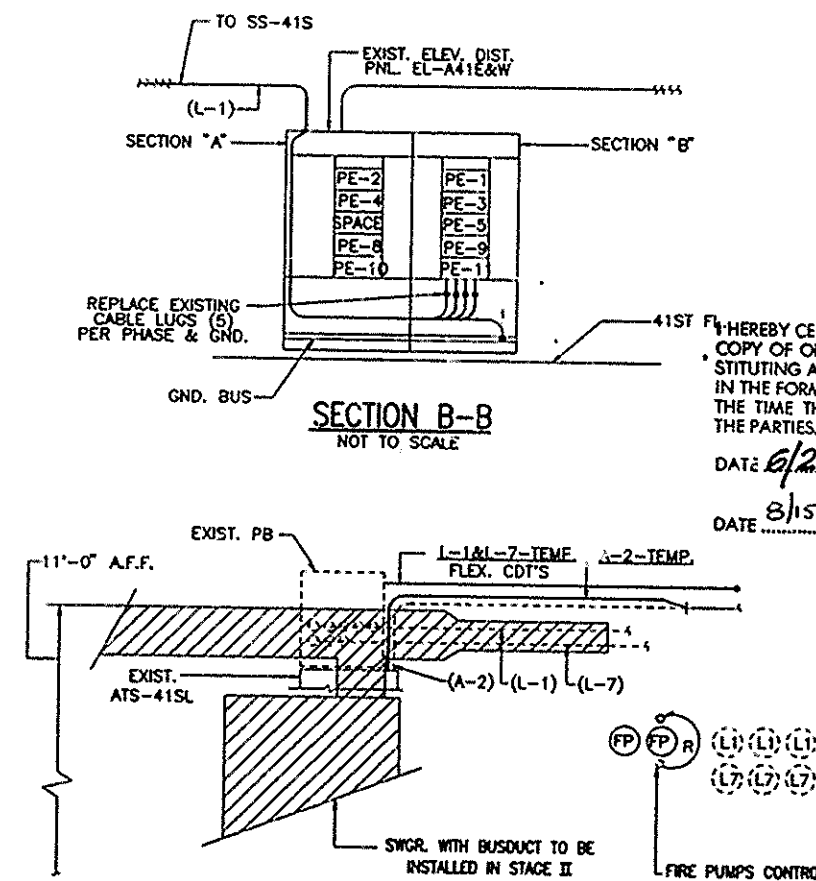


CONDUIT AND CABLE SCHEDULE STAGE I

CONDUIT DESIGNATION	CIRCUIT No.	FROM	TO	SERVICE	CONDUIT NUMBER OF SETS	CONDUIT SIZE	CABLE (PER COT.) OR BUSWAY NUMBER & SIZE	CABLE TYPE	REMARKS
R-9-TEMP	R-9	EXIST. SWGR. BUS "R"	PANEL #DP-41S	480V / 277V	1	3 1/2"	4-500MCM 1 # 1/0 1 # 1/0	XHHW-2 GND.	
DP-41S-11	11	PANEL #DP-41S	COMB. STARTER	480V	1	3/4"	3 # 12 1 # 12	XHHW-2 GND.	
		COMB. STARTER	MOTOR E-41-21	480V	1	3/4"	3 # 12 1 # 12	XHHW-2 GND.	SEE NOTE #4
DP-41S-12	12	PANEL #DP-41S	STARTER CABINET	480V	1	3/4"	3 # 12 1 # 12	XHHW-2 GND.	
		STARTER CABINET	MOTOR ACS-41S	480V	1	3/4"	3 # 12 1 # 12	XHHW-2 GND.	SEE ONE LINE DIAGRAM ON THIS DWG. AND DWG. #E-24 FOR PLAN
DP-41S-8	8	PANEL #DP-41S	COMB. STARTER	480V	1	3/4"	3 # 12 1 # 12	XHHW-2 GND.	
		COMB. STARTER	MOTOR FP-41-1-2	480V	1	3/4"	3 # 12 1 # 12	XHHW-2 GND.	
DP-41S-14	14	PANEL #DP-41S	STARTER CABINET	480V	1	2"	3 # 4/0 1 # 2	XHHW-2 GND.	
		STARTER CABINET	MOTOR ACS-41-3	480V	1	2"	3 # 4/0 1 # 2	XHHW-2 GND.	
DP-41S-9	9	PANEL #DP-41S	TR-LV-41S	480V / 277V	1	1"	3 # 6 1 # 10	XHHW-2 GND.	
DP-41S-10	10	PANEL #DP-41S	PANEL #LP-41S (EXIST.)	480V	1	2"	4 # 3/0 1 # 4	XHHW-2 GND.	
LV-41S		TR-LV-41S	PANEL #LV-41S	208V / 120V	1	1 1/2"	4 # 1 1 # 6	XHHW-2 GND.	
L-1	L-1	ATS-41SL	PB #2	480V	5	3 1/2"	3-500MCM 1-250MCM	XHHW-2 GND.	USE FLEXIBLE COT FOR TEMPORARY RUN
		PB #2	PANEL EL-A41E&W	480V	5	3 1/2"	3-500MCM 1-250MCM	XHHW-2 GND.	SEE DIAGRAM "A" & SEQUENCE OF INSTALLATION
A-2-TEMP	A-2	ATS-41SL	PNL EPC-41A	480V	1	3"	3-350MCM 1 # 2/0	XHHW-2 GND.	USE FLEXIBLE COT FOR TEMPORARY RUN ONE OF TWO EXISTING COT'S PER FEEDER.
L-7-TEMP	L-7	SWGR. "L"	MCC-MS41L	480V	3	3 1/2"	3-500MCM 1 # 4/0	XHHW-2 GND.	USE FLEXIBLE COT FOR TEMPORARY RUN SEE DIAGRAM "B" & SEQUENCE OF INSTALLATION

SEQUENCE OF INSTALLATION - STAGE I

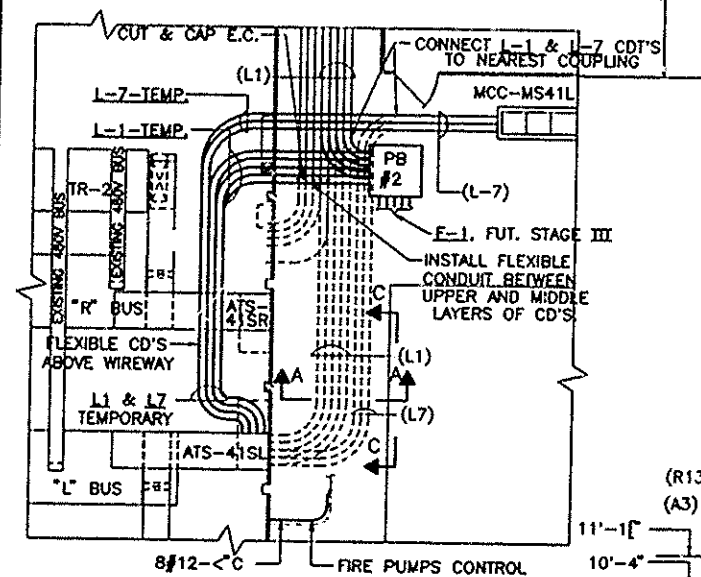
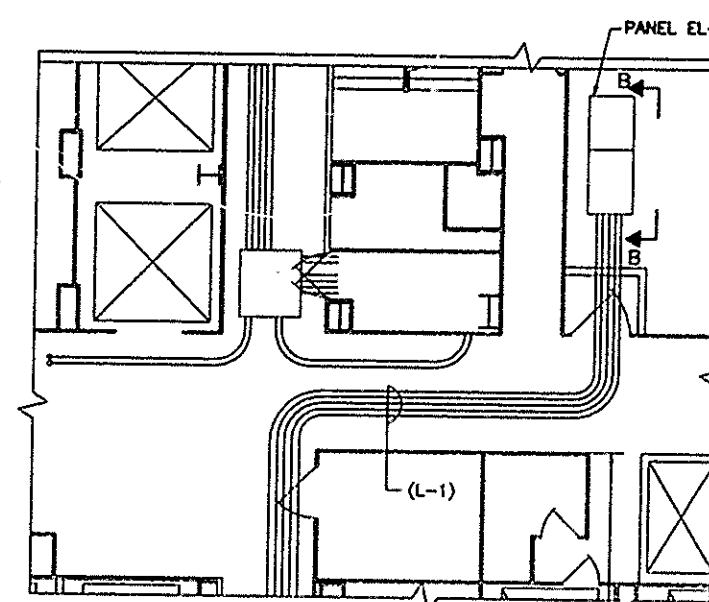
- FOR A-2, L-1 AND L-7 (SEE DIAGRAM "A" & "B")
- L-1**
- a. - INSTALL P.B.#2 & FLEXIBLE COT'S L-1-TEMPORARY.
 - b. - DISCONNECT FDR AT ATS-41SL AND EL-A41E&W AND REMOVE. REPLACE EXIST. CABLE LUGS (S) PER PHASE & GND. IN EL-A41E&W.
 - c. - CUT AND REMOVE COT'S EXTEND EXIST. L-1 COT TO PB#2
 - d. - INSTALL FDR L-1 FROM PANEL EL-A41E&W TO PB#2 AND FROM ATS-41SL TO PB#2.
 - e. - SPUCE FDR IN P.B.#2 AND CONNECT AT ATS AND PANEL EL-A41E&W. (ENERGIZE)
- L-7**
- a. - DISCONNECT FDR AT SWGR. "L" AND MCC-MS41L AND REMOVE.
 - b. - CUT AND REMOVE COT'S AS SHOWN.
 - c. - INSTALL FLEXIBLE COT'S AS SHOWN.
 - d. - INSTALL FDR L-7-TEMPORARY FROM MCC TO SWGR.
 - e. - CONNECT FDR. AT MCC AND SWGR. (ENERGIZE)
- A-2**
- a. - DISCONNECT FDR AT ATS-41SL AND PNL EPC-41A AND REMOVE.
 - b. - CUT AND REMOVE COT'S AS SHOWN.
 - c. - INSTALL FLEXIBLE COT'S AS SHOWN.
 - d. - INSTALL FDR A-2-TEMPORARY FROM ATS TO EPC-41A.
 - e. - CONNECT FDR. AT ATS AND EPC-41A. (ENERGIZE)
- * = CATEGORY "A" OR "B" LOAD OUTAGE-SEE NOTE #5
 ** = CATEGORY "C" LOAD OUTAGE-SEE NOTE #5



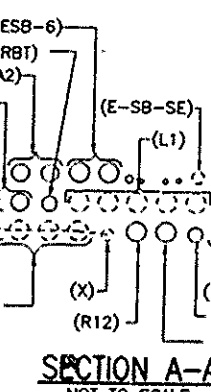
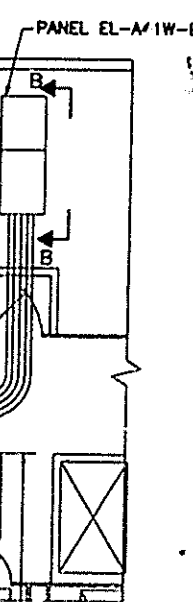
SECTION C-C
NOT TO SCALE

I HEREBY CERTIFY THAT THIS IS A TRUE AND CORRECT COPY OF ONE OF THE CONTRACT DRAWINGS CONSTITUTING A PART OF CONTRACT NO. WTC-802.071 IN THE FORM IN WHICH SAID DRAWINGS EXISTED AT THE TIME THE SAID CONTRACT WAS EXECUTED BY THE PARTIES.

DATE 6/21/95 *William A. Adam* SPEC. WRITER
 DATE 8/15/95 *Pat K. ...* ENGINEER OF DESIGN



PLAN - 41st FL. - SS-41S



SECTION A-A
NOT TO SCALE

- ### NOTES
1. FOR LEGEND SEE DWG. #E-1. FOR GENERAL NOTES, ABBREVIATIONS AND LIGHTING FIXTURE SCHEDULE SEE DWG. #E-2
 2. FOR TYPICAL SUBSTATION STAGE I SEQUENCE OF INSTALLATION SEE DWG. #E-4
 3. FOR HVAC CONTROL WIRING DIAGRAM & DETAILS SEE DWG. #E-108
 4. IN STAGE I TEMPORARY FEEDER R-9-TEMP. SHALL SUPPLY POWER TO PNL DP-41S WITH ONLY COT'S. DP-41S-8, 11, 12 & 14 CONNECTED. IN STAGE III, AFTER FEEDER R-9-TEMP. IS REMOVED AND REPLACED BY FEEDER L-6 CONNECT OTHER FEEDERS TO PNL DP-41S.
 5. ALL ELECTRICAL OUTAGES SHALL BE PERFORMED OUTSIDE NORMAL BUILDING OPERATING HOURS. SEE SPECIFICATIONS, DIVISION 1 ENTITLED "CONDITIONS AND PRECAUTIONS" FOR DESCRIPTION OF ELECTRICAL POWER OUTAGE CATEGORIES.
 6. INSTALL FEEDER WITH SWITCHGEAR ENERGIZED.

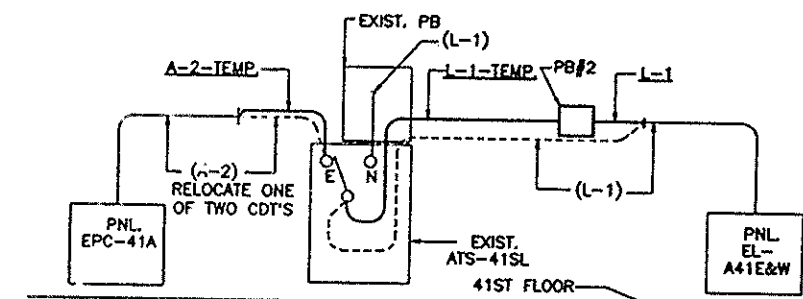


DIAGRAM "A"
RELOCATION OF FDR'S L-1 & A-2

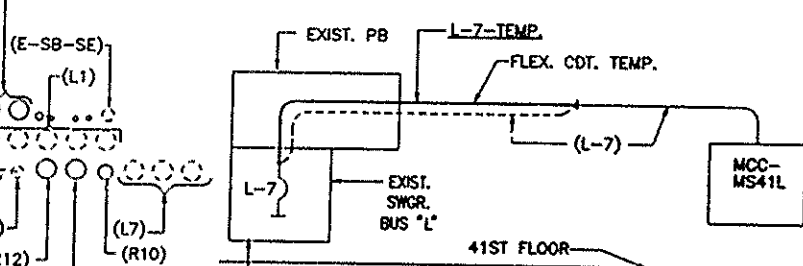
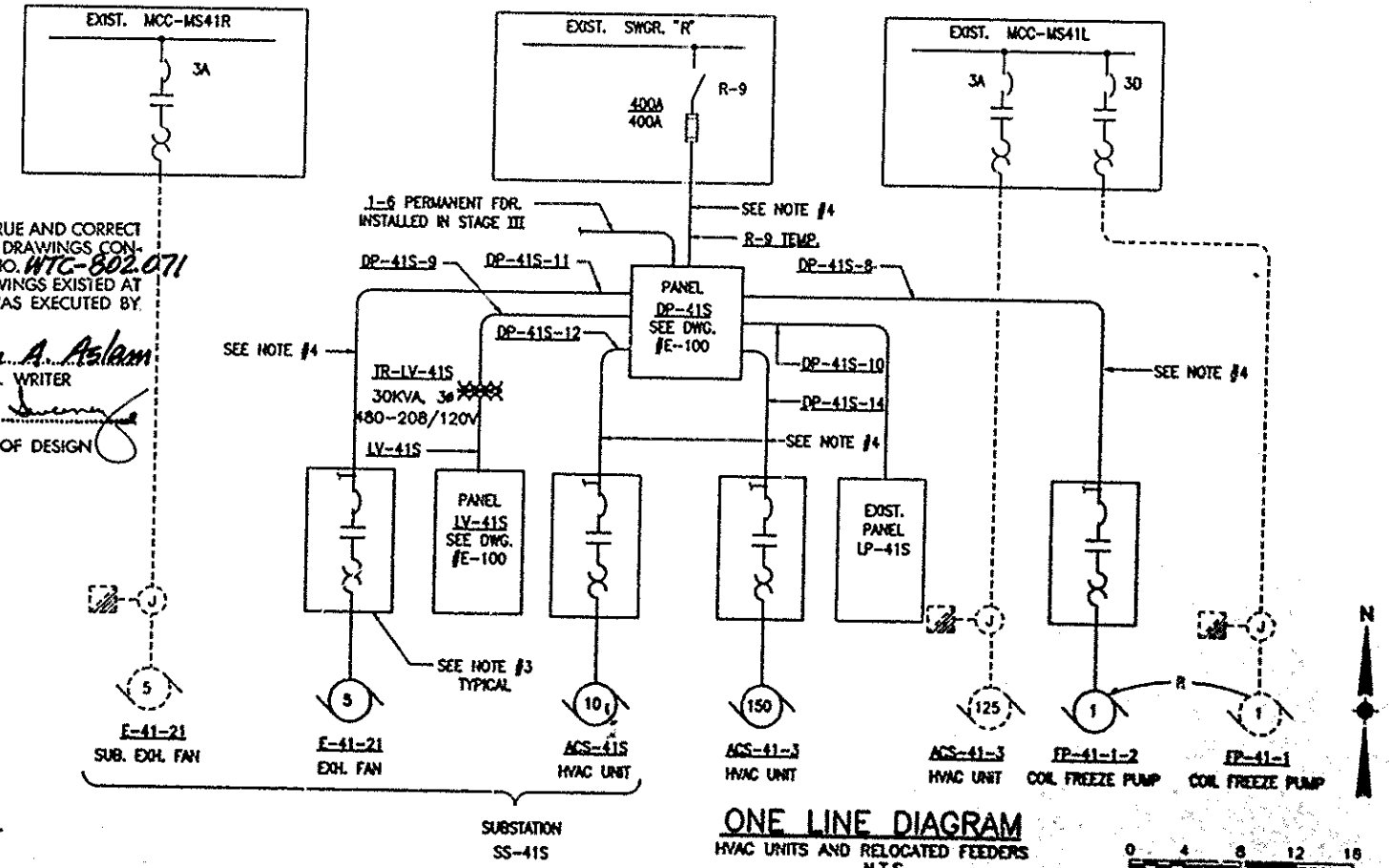


DIAGRAM "B"
RELOCATION OF FDR L-7



ONE LINE DIAGRAM
HVAC UNITS AND RELOCATED FEEDERS
N.T.S.

THE PORT AUTHORITY
OF NY & NJ

John V. ...
ENGINEERING PROGRAM MANAGER
WORLD TRADE CENTER
Pat K. ...
CHIEF ELECTRICAL ENGINEER

Engineering Department
Design Division
The World Trade Center
Electrical/HVAC
Upgrade Program

TOWER ONE AND TWO
LOW VOLTAGE
SUBSTATIONS
CONSTRUCTION AND
INSTALLATION

ELECTRICAL
SUBSTATION SS-41S
STAGE I ONE LINE
DIAGRAM CONDUIT
AND CABLE SCHEDULE

No. Date Revision Approved

This drawing subject to conditions in contract. All inventions, ideas, designs and methods herein are reserved to Port Authority and may not be used without its written consent.

ROYZMAN FISCHER ROYZMAN J.S.
Designed by Drawn by Checked by

Date 5-1-95 Scale AS NOTED

Contract Number WTC 802.071 Drawing Number E-23